DOCUMENT RESUME

ED 207 033 CS 006 284

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TITLE The Effects of Written Language Awareness on First Grade Reading Achievement.
PUB DATE Apr 81
NOTE 16p.; Paper presented at the Annual Meeting of the American Educational Research Association (Los Angeles, CA, April 13-17, 1981).

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Beginning Reading; Grade 1; *Predictive Measurement; *Predictive Validity; Predictor Variables; Primary Education; *Reading Achievement; Reading Readiness; *Reading Readiness Tests; *Reading Research

ABSTRACT

A battery of four reading readiness assessment tasks was administered to 267 first grade students to determine if the tasks predicted reading achievement as well as the Metropolitan Readiness Test (MRT). The four tasks, which were the best predictors in a previous study of seven readiness tasks, were the aural word boundaries task, the "rye-rhinoceros" task of distinguishing between words of different length beginning with the same letter, the aural consonant cloze task, and the metalinguistic interview. Subjects were tested with the Written Language Awareness Test, the California Short Form Intelligence Test, and the MRT during the first two months of school. Reading achievement was measured at the end of the school year. The results indicated that the Written Language Awareness test functioned as a good predictor of reading achievement and provided additional information not accounted for on the MRT, the traditional readiness measure. (RL)

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THE EFFECTS OF WRITTEN LANGUAGE AWARENESS ON FIRST GRADE READING ACHIEVEMENT

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Running Head: Written Language Awareness

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The importance of prereading experiences in laying foundations for more formal reading instruction is widely accepted. Recognizing that students will vary in terms of experience and maturation, schools traditionally provide for readiness assessment and readiness instruction. There is, however, a lack of pervasive proof of the efficacy of readiness assessment and readiness programs. This proof may stem in part from an existing lack of clarity about the nature of readiness for formal reading instruction.

In a review of research on readiness assessment, Nurse (1979) concluded that the content validity of readiness tests suffers from the lack of a definitive, empirically derived taxonomy of prereading/beginning reading skills. Instructionally two factors appear to compound the problem. First, children are not inexperienced with print (Mason, 1980, Hiebert, 1980). Young children have most likely developed many understandings about the relationship between speech and print, yet our theoretical understanding of this knowledge is not well developed nor is it reflected in assessment instruments or understood by classroom teachers. Second, as Johns (1980) points out, in addition to underrating some aspects of childrens knowledge, teachers may overrate children's grasp of some concepts about print (e.g., those dealing with terminology about reading and some of the arbitrary relationships between speech and print).

Clearer definitions of prereading behavior are beginning to emerge. A serious look at reading related abilities prior to the actual acquisition of generalizable decoding skills points to a definition that strongly reflects an increasing awareness of (Evans, Taylor & Blum,

1979), clarity about (Downing, Ollila, & Oliver, 1975), and ability to deal with print (Aull, 1974). These definitions focus on task related aspects of reading, and as such both call for and provide the dimensions for new measures of readiness. This new direction provides a clearer characterization of the understandings and skills that emerge prior to efficient ability to deal with text. It can also give teachers a picture of where students are along a progression of criterion-like tasks that appear to be strongly related to the process to be acquired.

There have been several efforts to build readiness assessment batteries that differ substantially from current commercial tests. One of the first attempts in this direction was made by Calfee, Chapman & Venezky (1972). Calfee and his colleagues have attemped to develop "clean" tests which isolate specific skills related to early reading acquisition and measure them as precisely as possible by clearly defining the underlying skill and holding task demands to a minimum (Calfee, 1977). The content measured by Calfee et al, for the most part, reflects traditional conceptualizations of skills related to learning to read: letter and word matching, letter-sound association, alphabet knowledge, vocabulary knowledge and acoustic-phonemic recognition.

Downing and his colleagues, however, have focused on children's clarity about the purposes served by written language, children's awareness that print contains information and awareness of certain technical aspects as profitable sources of readiness information (Downing et al, 1975; Evanechko, Ollila, Downing & Braun, 1973). This focus taps an area not previously considered in readiness measures.

The work reported here also reflects an attempt to examine related behaviors not currently measured in commercial tests. In an earlier study (Evans, Taylor & Blum, 1979) a battery of seven tasks derived from the theoretical literature was found to predict reading achievement as well as the Metropolitan Readiness Test (1965). The present study was designed to test the generalizability of the findings of the 1979 study and to investigate the effects of intelligence on these results since much of what is measured on readiness measures appears to be a general ability or maturational factor.

Written Language Awareness Tasks and Rationale

The four tasks that accounted for the most prediction in the first study were used in the present battery. The tasks and rationale are as follows:

1. Aural Word Boundaries. This task requires children to segment oral sentences into their component words. The segmentation task has been demonstrated to be difficult for young children (Karpova, 1966). Segmentation at a word level is the easiest of three hypothesized levels (word, syllable and phoneme). Phoneme segmentation is highly correlated with success in reading at the end of the first-grade year and is a strong differentiator between successful and nonsuccessful readers at the end of the second-grade year (Liberman, Shankweiler, Fisher & Carter, 1974). The lowest level of this hierarchy seems more appropriate if the purpose of the battery is to give teachers a developmental perspective. The aural word boundary task requires students to focus attention on the surface structure of language as opposed to the deep

meaning aspects of language. Word boundaries which are clearly defined in print are relatively obscure in speech. Prior to wide exposure to print the child has no basis for the fine segmentation distinctions that exist in print.

In this task, children were first taught task demands by training them to repeat random words presented by the examiner and at the same time mark each word with a block. When children understood the task, they were presented with four sentences. The constraints of syntax make this task difficult since young children tend to process the meaning in terms of semantic relations as opposed to the surface structure aspects (words). Therefore, children who can be trained to mark unconnected words with chips can fail to perform on these syntactically constrained elements. Performance on this task was scored on the basis of the number of segmentations the child made. Item scores range from one to four. Subtest scores for the four items range from 0-16.

2. Rye-Rhinoceros Task. The task used in this study was modeled on a task developed by Rozin, Bressman & Taft (1974). The task taps the child's understanding of a basic relationship between speech and print; the speech stream is mapped onto printed symbols, and the length of the spoken word is a cue to the length of the printed word. Children were presented with eight cards containing pairs of printed words beginning with the same letter. The examiner informed the child that "one of these words is 'rye' and the other is 'rhinoceros.'" and asked "Which word is 'rye'?" Children responded by pointing. Items are counter-balanced by length of target word and position of the long and short word

on the cards. The total score is the number of correct responses, with 0 to 8 points possible on this eight item subtest.

3. Aural Consonant Cloze. At some point children begin to attend to graphic aspects of words as cues to word identification. The initial consonant appears to be the most salient cue for emerging readers (Shankweiler and Liberman, 1972; Williams, 1971). The aural consonant cloze task measures children's use of initial consonants to identify unknown words at the end of a sentence when the preceding context is supplied by the examiner. Children were shown ten sentences; in each case the last word is underlined. Children are asked to assist the examiner in completing the sentence by helping the examiner figure out what the last word may be. The examiner reads the sentence aloud and halts at the last word. Scores on this task range from 0 to 30. Performance is scored according to the following criteria: 0 points for no response; 1 point for a response that makes sense but does not begin with the same initial consonant; 2 points for a response that begins with the appropriate consonant, but does not make sense; and 3 points for a response that begins with the appropriate consonant and makes sense.

4. Metalinguistic Interview. This task was designed to measure children's awareness of the technical aspects of written language. The teaching of reading involves a metavocabulary of technical terms about language. Work by Clay (1966), Downing (1971-72) and Reid (1966) has indicated that these technical aspects are not well known to children prior to schooling and reflect a growing clarity about reading and reading instruction.

In the interview children were asked to demonstrate that the term "alphabet" and/or "ABC's" refers to letters, to identify a single letter, a word, and a sentence both orally and by pointing to the actual location on a page. In addition this task tapped children's familiarity with the way books function by having them demonstrate a familiarity with front-back orientation toward the text on a page, awareness that one reads words rather than pictures, awareness that one reads from top to bottom of the page, etc. Items were scored for absence or presence of concepts, and scores range from 0 to 11.

Internal consistency and stability coefficients for the total Written Language Awareness Test and each subtest are presented in Table 1.

Table 1

Internal Consistency and Stability Coefficients
For the Written Language Awareness Test

	Internal Consistency		Stability
Subtests	Time 1	Time 2	(Test-Retest)
Total Test	.92	.95	.85
Aural Word Boundaries	.96	.94	.85
Rye-Rhinoceros Task	.96	.73	.48
Metalinguistic Interview	.60	.80	.66
Aural Consonant Cloze	.89	.93	.97

Method

The Written Language Awareness Test was administered individually to first graders in September of the school year. The California Short Form Intelligence Test (1962) was also administered in a group fashion at the same time. The school system routinely tested first graders on

the Metropolitan Readiness Test during the first six weeks of school. Thus three measures were obtained within the first two months of school: a measure of written language awareness (WLAT); a traditional measure of reading readiness (MRT); and a measure of verbal and nonverbal intelligence (CSFIT). In May the Metropolitan Reading Achievement Test (MAT) was administered to all students.

Subjects

Subjects were 267 first graders in 17 schools in a large suburban school system in the metropolitan Washington area. Inclusion of the schools in the study was based upon the willingness of the school-based reading teachers to participate. An open invitation was extended to all elementary school-based reading teachers in the system. The request was for teachers interested in prereading behavior and willing to 1) attend an after-school orientation session 2) administer the experiemental Written Language Awareness Test and the California Short Form Intelligence Test.

Seventeen teachers participated in the study and were familiarized with the testing and scoring procedures in a 30-minute training session.

Results

As in the first study, the Written Language Awareness Test (WLAT) continues to function as a good predictor of end of the year reading achievement and to predict as well as the Metropolitan Readiness Test (MRT), a more conventional measure of readiness. Table 2 presents the correlation coefficients for the Written Language Awareness Test, the

Metropolitan Readiness Test and Metropolitan Achievement Test. The WLAT accounts for 41% of the variance of the achievement measure (r = .64). A similar relationship exists for the MRT (r = .61, variance accounted for = 37%).

Table 2

Correlation Coefficients for the WLAT Subtests
And Metropolitan Readiness and Achievement Measures

	Total WLAT	Metropolitan Readiness	Metropolitan Achievement
Aural Word Boundaries	.72	.46	.42
Rye-Rhinoceros Task	.64	.51	.50
Metalinguistic Interview	.57	.59	.35
Aural Consonant Cloze	.83	.52	.59
Total WLAT	-	.65	.64
MRT		-	.61

Although on face value the subtests of the WLAT seem to be measuring aspects of reading related behavior not reflected on the Metropolitan Readiness Test, correlations between the subtests and the MRT are high, ranging from .46 to .59. Table 3 presents the correlation coefficients for the two readiness measures and the achievement and intelligence measures. As can be seen from this table, both readiness measures correlate highly with the total intelligence measure but the correlation is higher for the MRT.

Table 3

Correlation Coefficients for the Readiness Measures (WLAT, MRT), Achievement Measure (MAT), And Intelligence (CAL)

	WLAT	MRT	MAT	CAL	CANL	CALT
WLAT	-	.64	.63	.49	.55	.58
MRT		-	.61	.66	.72	.76
MAT			-	.46	.52	.54
CAL				-	.60	.88
CANL					-	.90
CALT						-

WLAT = Written Language Awareness Test
MRT = Metropolitan Readiness Test
MAT = Metropolitan Achievement Test
CAL = Language Subtest of California Short Form Intelligence Test
CANL = Non-Language Subtest of California Short Form Intelligence Test
CALT = Total California Short Form Intelligence Test

To investigate the question of unique variance measured by the WLAT that may be more directly related to reading behavior, Multiple Regression Analyses were run controlling for the effects of intelligence with reading achievement as the dependent variable.

Tables 4 and 5 present the results of the Multiple Regression Analyses alternating the order of entry of the WLAT and the MRT. In comparing these two models, although R^2 increase is significant ($p < .01$) in each case, there is a greater increase in R^2 when the WLAT is entered first. Thus it appears the WLAT is providing additional information not accounted for by the MRT when the variance shared with a measure of general intelligence is controlled.

Table 4

Multiple Regression on Reading Achievement
Controlling for Intelligence with WLA Test Entered First

Variable	MultiR	R^2	R^2 change	Beta
California Intelligence Test	.5439	.2958	.2958	.1008
WLAT	.6763	.4574	.1615	.4059
MRT	.6954	.4836	.0263	.2741

Table 5

Multiple Regression on Reading Achievement
Controlling for Intelligence with MRT Entered First

Variable	MultiR	R^2	R^2 change	Beta
California Intelligence Test	.5439	.2958	.2958	.1008
MRT	.6250	.3906	.0948	.2741
WLA	.6954	.4836	.0930	.4059

Discussion

The need for definitive measures of prereading skills that reflect a readiness for formal instruction has long been a concern in educational psychology. Recently Mason (1981) has described a prereading taxonomy that includes: 1) reference, or the awareness of speech junctures that correspond to printed words; 2) phonological awareness, or the ability to break speech sounds into the abstract phonemic units that map onto letters and letter groups; 3) labels and rules or the understanding of words used to talk about and describe reading as well as some of the arbitrary aspects of written language (e.g., white spaces serve to separate words).

Each of these areas could be characterized by a series of tasks that move from simple to complex. Mason's taxonomy is of interest in the present investigation in relation to the subtests of the WLA. Each of the subtests in some way relates to this taxonomy. The Aural Word Boundary Task relates to Mason's notion of reference. To perform well on this task children have to be able to focus on surface aspects of language as opposed to deep structure aspects. Some notion of word as reference, at least in oral language, seems to be a prerequisite for this task.

Mason's second category deals with phonological awareness or the interrelatedness between letter symbols and words. The matching of consonant sounds to initial phonemes appears to be an early manifestation of this behavior. Two tasks on the WLAT appear to be specifically related to this aspect of prereading behavior. Successful performance on the Rye-Rhinoceros Task requires that children understand that the length of the printed word relates to the length of the spoken word. The Aural Consonant Cloze Task taps the same understanding on a presumably more sophisticated level. Here children's phonological awareness is refined to the point of using information from the initial consonant to fill in words in context.

The Metalinguistic Interview taps some aspects of Mason's notion of labels and rules. This task asks that children demonstrate their understanding of the terms "letter," "word," "sentence" both orally and in print, as well as their understanding of the way print functions in books.

The results of this study reflect current conceptions about the nature of prereading behavior and support the notion that a more precise definition can be of greater predictive value than existing global measures. Much work still remains to be done toward differentiating these general concepts of prereading behavior. In addition, there is a need to examine and describe the environment and circumstances that foster the development of these concepts about print as well as instructional programs that might promote this understanding.

References

Aulls, M. Personal communication.

Calfee, R. Assessment of independent reading skills: basic research and practical applications. In A. S. Reber and D. L. Scarborough (Eds.), Toward a psychology of reading. Hillsdale, N. J.: Lawrence Erlbaum Associates, Inc., 1977.

Calfee, R., Chapman, R. & Venezky, R. How a child needs to think to learn to read. In I. L. Gregg (Ed.) Cognition in learning and memory. New York: John Wiley and Sons, Inc., 1972.

Downing, J., Ollila, L. & Oliver, P. Cultural differences in children's concepts of reading and writing. British Journal of Educational Psychology, 1975,45, 312-316.

Evanechko, P., Ollila, L., Downing, J. & Braun, C. An investigation of the reading readiness domain. Research in the Teaching of English, 1973, 71, 61-78.

Evans, M., Taylor, N. & Blum, I. Children's written language awareness and its relationship to reading achievement. Journal of Reading Behavior, 1979, 11, 7-20.

Hiebert, E. The relationship of cognitive reasoning ability, oral language comprehension and home experiences to preschoolers' print awareness. Paper presented at the American Educational Research Association Annual Meeting, Boston, 1980.

Johns, J. First graders' concepts about print. Reading Research Quarterly, 15, 1980, 529-549.

Karpova, S. N. The preschooler's realization of the lexical structure of speech. In D. Slobin, Abstracts of Soviet studies of child language. In F. Smith & G. Miller (Ed.), The Genesis of Language, Cambridge, Mass.: The MIT Press, 1966.

Lieberman, I., Shankweiler, D., Fisher, F. & Carter, B. Explicit syllable and phoneme segmentation in the young child. Journal of Experimental Child Psychology, 1974, 18, 201-212.

Mason, J. Reading readiness: a definition and skills hierarchy from preschoolers' developing concepts of print. Technical Report No. 59, Center for the Study of Reading, University of Illinois, Urbana-Champaign, 1977.

Mason, J. Prereading: a developmental perspective, Technical Report #198. The Center for the Study of Reading, University of Illinois, Champaign, Ill., February 1981.

Nurss, J. Assessment of readiness. In T. G. Waller & G. E. MacKinnon (Eds.). Reading research: advances in theory and practice, New York: Academic Press, Inc., 1979.

Test References

California Short-Form Test of Mental Maturity. Sullivan, E. T., Clark, W. W. & Tiegs, E. W. CTB/McGraw-Hill, 1962.

Metropolitan Achievement Test, Comprehension Primary 1 Battery, Form F. Walter N. Durost et al. New York: Harcourt Brace, Jovanovich, 1970.

Metropolitan Readiness Tests, Form A. Gertrude H. Hildreth et al. New York: Harcourt, Brace and World, 1965.